

DC67662 | Lipid 48

Instructions for Use

Lipid 48 is a leading ionizable lipid designed for therapeutic nucleic acid delivery. Its key function is to form the core of lipid nanoparticles (LNPs) that efficiently encapsulate and deliver cargoes like mRNA and CRISPR guide RNAs into cells. Its optimized structure allows it to remain neutral in the bloodstream for low toxicity but become positively charged in acidic cellular compartments (endosomes), where it disrupts the membrane to release the therapeutic payload. Data from the patent demonstrates its superior profile: it achieves high gene editing efficiency (e.g., ~80% indel rates in vitro and 16.2% in vivo in mouse liver) while maintaining low cytotoxicity (cell viability >80% at effective doses), establishing it as an ideal candidate for gene therapy applications due to its exceptional balance of potency and safety.

Product information

CAS No.	Not available
Chemical Name	Lipid 48
Formula	C75H145O8N9
M.Wt	1,301.04
Purity	>98%
Storage	Original product: up to 1 year under the storage conditions stated on the vial, kept tightly sealed. Stock solutions: aliquots at -20°C, generally up to one month.
Shipping condition	Ships from Shanghai. Pure lipid is stable during ice-pack transport.

Formulation & study context

Literature values apply to the cited study only. Administration routes describe research, not clinical instructions.

A complete product-specific formulation has not been verified. No standard ratio is substituted.

N/P ratio	Not reported in the verified record
Cargo	Not available in the verified record
Administration route	Not available in the verified record
Animal model	Not available in the verified record
Formulation process	Not available in the verified record

N/P is a nitrogen-to-phosphate molar ratio. Lipid:cargo mass ratio is a different quantity and must not be used as N/P.

Stock-solution preparation table

Calculated using product-page MW: 1301.04 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	7.686 mL	1.537 mL	0.769 mL
25 mg	19.215 mL	3.843 mL	1.922 mL
50 mg	38.431 mL	7.686 mL	3.843 mL
100 mg	76.862 mL	15.372 mL	7.686 mL
250 mg	192.154 mL	38.431 mL	19.215 mL

Volume (mL) = mass (mg) × 1000 / [MW (g/mol) × concentration (mM)]. Mathematical conversions only; not measured solubility. Confirm solvent compatibility and the exact material before preparation.

Handling & storage

Provided that storage conditions are as stated on the product vial and the vial is kept tightly sealed, the product can be stored for up to 1 year.

Wherever possible, prepare and use solutions on the same day. If stock solutions must be prepared in advance, store them as aliquots in tightly sealed vials at -20°C. Generally, these will be usable for up to one month.

Before use, and prior to opening the vial, allow the product to equilibrate to room temperature for at least 1 hour.

References

Not available